

Serial No. 10/577,161
Reply to Office Action dated October 12, 2010

Docket No. 1006/0165PUS1

REMARKS/ARGUMENTS

Favorable reconsideration and allowance of the present application is respectfully requested. Claims 1-12 are pending in the above application of which claims 1 and 7 are independent.

The Office Action dated October 12, 2010, has been received and carefully reviewed. In that Office Action, claims 1-3 and 6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dage in view of Uhl, and claims 4 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dage in view of Uhl and further in view of Itakura. Each of these issues is addressed below, and reconsideration and allowance of claims 1-6 is respectfully requested in view of the above amendments and the following remarks.

AMENDMENTS TO THE SPECIFICATION

By the above amendment, the title has been revised, as suggested by the examiner, to reflect the fact that the present claims recite a method rather than a device.

CLAIM AMENDMENTS

Claim 1 has been amended to add the word "first" to the phrase "electrical additional heater" to make it "electrical first additional heater" for consistency with the rest of the claim. In addition, claim 3 has been amended to remove a reference numeral that was not removed by the previous amendment. The entry of these amendments is respectfully requested.

Serial No. 10/577,161
Reply to Office Action dated October 12, 2010

Docket No. 1006/0165PUS1

REJECTIONS UNDER 35 U.S.C. 103(a)

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dage in view of Uhl. Claim 1 recites a method in a motor vehicle that has an internal combustion engine, a vehicle interior, a cooling circuit for cooling the internal combustion engine, a heating circuit which has at least one heating body for heating the vehicle interior, an electrical first additional heater, and a heat source connected to the cooling and/or heating circuit as a second additional heater. That method includes operating the electrical first additional heater to heat the vehicle interior, operating the second additional heater to heat the cooling and/or heating circuit, and, after the second additional heater is operating, switching off or turning down the electrical additional heater.

Dage shows a motor vehicle having a heater core 48, a PTC heater 66, and an exhaust gas heater 54 for heating fluid in a heating circuit. As acknowledged by the Office Action, Dage does not show switching off or turning down an electrical first additional heater (interpreted as PTC heater 66) after the second additional heater (interpreted as the exhaust gas heater 54) is operating. Therefore, it would be necessary for a person of ordinary skill in the art to make some change to Dage to arrive at the claimed invention. According to *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), a reason for making this change must also be identified to render the proposed change obvious.

Dage discloses a thermal management system for a hybrid vehicle. One of ordinary skill in the art would appreciate that hybrid vehicles produce sufficient electrical

Serial No. 10/577,161

Docket No. 1006/0165PUS1

Reply to Office Action dated October 12, 2010

power to move the vehicle and its occupants, at times using electric power alone. These vehicles also include various means for recharging batteries to provide for such operation. Dage's vehicle includes an exhaust gas heater 54, a cabin heater core 48, and a PTC heater 66. In order to satisfy the limitations of claim 1, a reason must be provided for operating Dage's system in a manner that switches off or turns down the PTC heater 66 after the exhaust gas heater is operating. The asserted reason for making this change is: Uhl teaches that a PTC heater loads the electrical system of a conventional vehicle "to a considerable degree." Therefore, the Office Action asserts that the PTC in Dage should also be turned down or off to avoid such loading.

It is respectfully submitted that a hybrid vehicle includes a more robust electrical system that will likely not be loaded to a considerable degree by a PTC heater. There would be no need in Dage, therefore, to turn off a PTC heater after the exhaust gas heater is operating. Instead, some different, undisclosed method of thermal management would likely be appropriate in Dage. Since Dage does not appear to suffer from the problems that lead Uhl to turn off a PTC heater, one of ordinary skill in the art would have no reason to modify Dage based on Uhl as proposed in the Office Action, and claim 1 is submitted to be allowable over Dage in view of Uhl for at least this reason.

Claims 2-6 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dage in view of Uhl and further in view of Itakura. Claims 4 and 5 depend from claim 1. Itakura does not address the shortcomings of Dage and Uhl discussed above in

Serial No. 10/577,161

Docket No. 1006/0165PUS1

Reply to Office Action dated October 12, 2010

connection with claim 1. Claims 4 and 5 are submitted to be allowable for at least the same reasons as claim 1.

NEW CLAIMS

New claims 7-12 are also submitted to be allowable over the art of record. Claim 7 recites a method that involves a motor vehicle having an internal combustion engine, a vehicle interior, a cooling circuit for cooling the internal combustion engine, at least one heating body for heating air flowing into the vehicle interior, and an electrical additional heater for heating the air flowing into the vehicle interior. The vehicle also includes a heating circuit containing a fluid to which a first heat is applied at the internal combustion engine, which heating circuit is in fluid communication with the at least one heating body. The heating body provides sufficient heat to heat the vehicle interior when the heating body has a first temperature. The vehicle also includes a non-electrical additional heater selectively adding a second heat to the heating circuit in addition to the first heat. The method is for heating the vehicle interior upon starting the internal combustion engine when the heating body has a temperature less than the first temperature, and the method includes starting the internal combustion engine, operating the electrical additional heater to heat the air flowing into the vehicle interior, and, while the internal combustion engine and electrical additional heater are operating, operating the non-electrical additional heater to add the second heat to the heating circuit. When the heating body reaches the first temperature, the electric additional heater is switched off or turned down. As discussed at page 4, lines 4-9 of the present application, such an arrangement heats the fluid in the heating circuit more quickly than

Serial No. 10/577,161

Docket No. 1006/0165PUS1

Reply to Office Action dated October 12, 2010

would occur without the non-electric additional heat source, and this allows the electric additional heater to be turned off sooner than would otherwise be possible. Likewise, page 4, lines 35-38 of the present application indicate that an electric heater can "bridge" the starting phase of a vehicle and provide heat while a heating body is being heated by an engine and a non-electrical heater.

Dage shows various devices for adding heat to a heating circuit and also shows a PTC heater. However, these heating devices are all used in a hybrid vehicle, and nothing in Dage's disclosure suggests that Dage's system should be operated in the manner recited in claim 7. Uhl merely teaches that a PTC heater in a conventional vehicle should be turned off to reduce the load on the electrical system of the conventional vehicle. This teaching does not suggest any modification to Dage that would result in the invention of claim 7. Claim 7 is submitted to be allowable for at least this reason.

Claims 8-12 depend from claim 7 and are submitted to be allowable for at least the same reasons as claim 7.

CONCLUSION

Each issue raised in the Office Action dated October 12, 2010, has been addressed, and it is believed that claims 1-12 are in condition for allowance. Wherefore, reconsideration and allowance of these claims is earnestly solicited. If the examiner believes that any additional changes would place the application in better condition for allowance, the examiner is invited to contact the undersigned attorney at the telephone number listed below.

Serial No. 10/577,161
Reply to Office Action dated October 12, 2010

Docket No. 1006/0165PUS1

Deposit Account Authorization

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 50-3828 and please credit any excess fees to such deposit account.

Respectfully submitted,



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